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### Patent Claims

1. Cell culture chamber (20) for a closed cell culture system serving to continuously supply different cells with liquid nutrient media, growth factors, gases and the like, characterized by the fact that the cell culture chamber (20) is materially composed of the following components:
  - a) a membrane plate (1) with a membrane (2) serving to accommodate at least one cell culture and equipped with a number of channels (4, 4', 4'', 4''') for supplying liquid, gassing and sensor connection;
  - b) a transparent glass pane (3) which is placed on one side of the membrane plate (1) while provided for observing the inside of the cell culture chamber (20) from the side mentioned above; and
  - c) a cover plate (5) which is placed on the opposite side of the membrane plate (1) and which is provided with an incorporated, transparent glass pane (6) for illuminating the inside of the cell culture chamber (20) from this opposite side with the aid of an assigned lighting system.
2. Cell culture chamber according to claim 1, characterized by the fact that the transparent glass pane (3) is fixed on the membrane plate (1) in the area of the underside of the membrane plate (1) for the purpose of observing the inside of the cell culture chamber (20).

3. Cell culture chamber according to claim 1, characterized by the fact that the cover plate (5) forms a cell culture chamber cap with a securely integrated transparent glass pane (6), such cell culture chamber cap being fixed in a releasable manner on the upper side of the membrane plate (1).
4. Cell culture chamber according to one of the claims above, characterized by the fact that the cell culture chamber cap (5) as well as the underside of the membrane plate (1) show an opening for the accommodation and fixation of the respective glass pane (6 resp. 3).
5. Cell culture chamber according to one of the claims above, characterized by the fact that the glass pane (6, 3) is a sapphire glass pane.
6. Cell culture chamber according to one of the claims above, characterized by the fact that, for the fixation of the membrane (2) on the membrane plate (1), a retaining ring (7) is provided, which can, with the aid of the cell culture chamber cap (5), be pressed on the periphery of the membrane (2) so that the latter can be fixed.
7. Cell culture chamber according to one of the claims above, characterized by the fact that, on the side of the cell culture chamber cap (5) facing the membrane plate (1), a joint ring (8) is provided, by which the cell culture prepared on the membrane (2) is aseptically closed when the cell culture chamber (20) is closed.
8. Cell culture chamber according to one of the claims above, characterized by the fact that a constant, continuous gassing is enabled by means of a suitable compartmentalization of the cell culture chamber (20) via the respectively assigned channels (4', 4'') with freely selectable concentrations of the most various gases.

9. Cell culture chamber according to one of the claims above, characterized by the fact that the membrane plate (1) can be fixed at its side opposite the cell culture chamber cap (5) on an assigned retainer plate (10) for integration in the cell culture system, this retaining plate (10) being equipped with an integrated heating for the cell culture chamber (20).
10. Cell culture chamber according to claim 9, characterized by the fact that the heating is an electrical heating.
11. Cell culture chamber according to one of the claims above, characterized by the fact that the membrane (2) is a gas-permeable biofoil.